

## MSDS600 Week 2 Assignment - Nathan Worsham

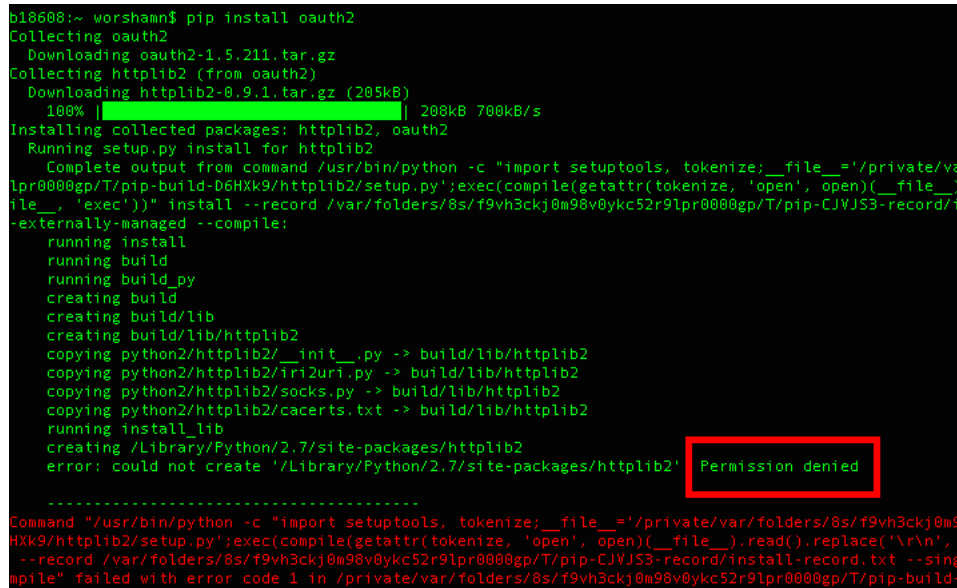
Overall my experience in working to accomplish this assignment was relatively pain-free and brisk. I believe however this would not be the experience for all the students in the class which likely is affected by several factors:

- I have worked with python before.
- I have worked with APIs, developer accounts, and developer tokens before.
- I already have a Twitter account.
- I am running the latest OS X that already has pip installed and I have used pip before.
- I am already familiar with capturing output of a command or script.

As mentioned I was running my assignment on Mac OS X so it was not necessary to install pip. Next I went ahead and opened terminal and ran the command:

```
pip install oauth2
```

I received this error:

A terminal window screenshot with a black background and green text. The user runs 'pip install oauth2'. The output shows the collection of 'oauth2' and 'httplib2' packages. A progress bar for 'httplib2-0.9.1.tar.gz' is shown at 100%. The installation process for 'httplib2' begins, including running setup.py. The error message 'error: could not create '/Library/Python/2.7/site-packages/httplib2'' is displayed in red text. A red rectangular box highlights the words 'Permission denied' in the error message. The full command and error details are shown at the bottom of the terminal window.

```
b18608:~ worsham$ pip install oauth2
Collecting oauth2
  Downloading oauth2-1.5.211.tar.gz
Collecting httplib2 (from oauth2)
  Downloading httplib2-0.9.1.tar.gz (205kB)
    100% |#####| 208kB 700kB/s
Installing collected packages: httplib2, oauth2
Running setup.py install for httplib2
Complete output from command /usr/bin/python -c "import setuptools, tokenize; __file__='/private/var/folders/8s/f9vh3ckj0m98v0ykc52r9lpr0000gp/T/pip-build-D6HXk9/httplib2/setup.py';exec(compile(getattr(tokenize, 'open', open)(__file__).read().replace('\r\n', '\n'), __file__, 'exec'))" install --record /var/folders/8s/f9vh3ckj0m98v0ykc52r9lpr0000gp/T/pip-CJVJ53-record/install-record.txt --single-
-externally-managed --compile:
  running install
  running build
  running build_py
  creating build
  creating build/lib
  creating build/lib/httplib2
  copying python2/httplib2/__init__.py -> build/lib/httplib2
  copying python2/httplib2/iri2uri.py -> build/lib/httplib2
  copying python2/httplib2/socks.py -> build/lib/httplib2
  copying python2/httplib2/cacerts.txt -> build/lib/httplib2
  running install_lib
  creating /Library/Python/2.7/site-packages/httplib2
error: could not create '/Library/Python/2.7/site-packages/httplib2'
Permission denied
-----
Command "/usr/bin/python -c "import setuptools, tokenize; __file__='/private/var/folders/8s/f9vh3ckj0m98v0ykc52r9lpr0000gp/T/pip-build-D6HXk9/httplib2/setup.py';exec(compile(getattr(tokenize, 'open', open)(__file__).read().replace('\r\n', '\n'), __file__, 'exec'))" install --record /var/folders/8s/f9vh3ckj0m98v0ykc52r9lpr0000gp/T/pip-CJVJ53-record/install-record.txt --single-compile" failed with error code 1 in /private/var/folders/8s/f9vh3ckj0m98v0ykc52r9lpr0000gp/T/pip-build-D6HXk9/httplib2
```

Seeing the error “Permission denied” coupled with the fact that the command it tried to run—setup tools— also “failed” tipped me off that I would need to run this command with root privileges. I have run into this before and really just forgot about it as I was trying to follow the instructions word-for-word. So next I ran the command correctly for my system:

```
sudo pip install oauth2
```

The command was successful installing the package this time but still did respond with one issue:

```
The directory '/Users/worshamn/Library/Caches/pip/http' or its parent directory is not owned by the current user and the cache has been disabled. Please check the permissions and owner of that directory. If executing pip with sudo, you may want sudo's -H flag.
The directory '/Users/worshamn/Library/Caches/pip' or its parent directory is not owned by the current user and caching wheels has been disabled. check the permissions and owner of that directory. If executing pip with sudo, you may want sudo's -H flag.
```

Looking at the man page for sudo and seeing what the -H flag does, it appears to be about setting the HOME directory of the target user. I am not certain who the target user is in this instance but re-running the command gets the “Requirement already satisfied” message and since I received no further issues I believe the message can be disregarded.

I was already logged into Twitter so going to <https://dev.twitter.com/apps> I was able to immediately click on create app. At this point I was informed that I did not have a mobile phone number associated with my account and would be required to do so in order to continue. I went ahead and did as asked by adding my mobile number (which I imagine is data that Twitter is more than happy to collect, I have not read their terms of service, but it represents another NULL value conquered and more data ready to sell/exchange/barter to a waiting line of third parties).

#### Error

You must add your mobile phone to your Twitter profile before creating an application. Please read <https://support.twitter.com/articles/110250-adding-your-mobile-number-to-your-account-via-web> for more information.

Now I was able to create the app and fill out the form. For the dummy website I used <http://0.0.0.0>—this is an address I am accustomed to using in test API accounts. As wikipedia (n.d.) puts it “the address 0.0.0.0 is a non-routable meta-address used to designate an invalid, unknown or non-applicable target”.

Your application has been created. Please take a moment to review and adjust your application's settings.

Next I realized that the API key and token would need to be generated, so after generating these I was ready to copy and paste the values into the python script:

```
MSDS600 — vim — ttys007 — 111x38
import oauth2 as oauth
import urllib2 as urllib

# See assignment1.html instructions or README for how to get these credentials

api_key = "c0IsNJTF6rLCju3X40kokj2bw"
api_secret = "Mk4LEy97DQ1Gu42CkSQ0qRw1A5Uj4F100ymPiMCHnhv31x13WD"
access_token_key = "73230945-noIck64rkdT2AzgtrFAS91mLyWn8RhPE1NCIvaorF"
access_token_secret = "9EQfEMYE0FttwD9zhLVtyvmScRaLcuSJ02fmF5ibEzXQm"

_debug = 0

oauth_token = oauth.Token(key=access_token_key, secret=access_token_secret)
oauth_consumer = oauth.Consumer(key=api_key, secret=api_secret)

signature_method_hmac_sha1 = oauth.SignatureMethod_HMAC_SHA1()
```

Finally I ran the command `python twitterstream.py > output.txt` for a few seconds and then checked the contents with `tail` to be sure I was getting what was expected which turned out to be good:

```
b19608@MSDS600 worshamn$ tail -1 output.txt
{"created_at":"Thu Aug 27 22:08:10 +0000 2015","id":"637023828313567234","id_str":"637023828313567234",
  "Figures Animals Assorted http://v.t.co/B7l7fLRX6K http://v.t.co/9hnwxVqWEK","source": "\u003c/a>
low\u003eIu003eIFTTT\u003c/a>\u003c/a>\u003c/a>", "truncated": false, "in_reply_to_status_id": null, "in_reply_to_status_
uid": null, "in_reply_to_user_id": null, "in_reply_to_screen_name": null, "user": {"id": "3069037081", "id_str":
al", "screen_name": "faustoarins", "location": "", "url": null, "description": "highly sensational auctio
e, \"followers_count\": 34, \"friends_count\": 40, \"listed_count\": 12, \"favorites_count\": 0, \"statuses_count\": 4
4 +0000 2015\", \"utc_offset\": -25200, \"time_zone\": \"Pacific Time (US & Canada)\", \"geo_enabled\": false, \"lan
is translator\": false, \"profile_background_color\": \"CODEDED\", \"profile_background_image_url\": \"http://v
/v/bz.png\", \"profile_background_image_url_https\": \"https://v.bz.png\", \"images\": {\"theme\": {\"theme1\":
```

I then ran the command for the 3 minutes as required. After the time was up I used `cat` and `wc -l` to see how many lines I had collected which was 9619:

```
b18608:MSDS600 worshamn$ cat output.txt |wc -l
9619
```

## Reference

Wikipedia (n.d.) Retrieved from <https://en.wikipedia.org/wiki/0.0.0.0>